
VICTORIAN ENTOMOLOGIST

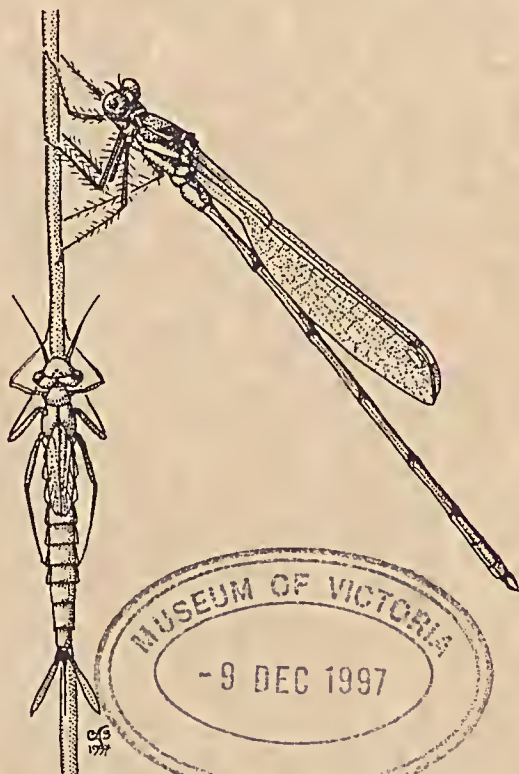


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News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species,
- (d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at room AG17, La Trobe University Carlton Campus, 625 Swanston Street, Carlton, Melway reference Map 2B E10 at 8 p.m. on the third Friday of even months, with the possible exception of the December meeting which may be held earlier. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS

Ordinary Member	\$20.00
Country Member	\$16.00 (Over 100 km from GPO Melbourne)
Student Member	\$12.00
Associate Member	\$ 5.00 (No News Bulletin)

No additional fee is payable for overseas posting by surface mail of the news bulletin. Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

Cover design by Alan Hyman.

Cover illustration of *Synlestes weyersii tillyardi* (O.: Synlestidea) ♂ by Catherine Symington.

MINUTES OF THE GENERAL MEETING, 17 OCTOBER 1997

The President, A. Kellehear, opened the General Meeting at 8:10 pm

Present: G. Berg, C. Dickson, D. Dobrosak, K. Dunn, I. Endersby, A. & E. Farnworth, A. Kellehear, M. Linger, R. MacPherson, M. Malipatil, D. & N. Stewart, C. Taylor.

Visitors: A. & L. Crawford, M. Dickson, A. Dobrosak, M. Endersby, C. Peterson, J. Tinetti, J. Fook.

Apologies: I. Faithfull, E. & P. Grey, P. Williams.

Minutes:

Minutes of the 15 August 1997 General Meeting [*Vic. Ent.* 26(5):85-86] were accepted with the correction of removal of the names D. & N. Stewart from the 'Apologies' list. (P. Carwardine/I. Endersby).

General Business:

Membership: Mr C. J. Knight was elected to membership. An application for membership was received from Prof. Roger Kitching.

The meeting was closed by the President at 8.14 pm after which the hosts for the evening, M. Malipatil, G. Berg and K. Dunn spoke about the Institute for Horticultural Development followed by a tour of the collection and rearing facilities. Those present were rewarded with a rare opportunity to view the Victorian Agricultural Insect Collection and the rearing facilities for biocontrol agents. At the conclusion of the tour, the Society's President thanked M. Malipatil, G. Berg and K. Dunn for giving their time to make the evening possible. The light refreshments provided by the hosts were appreciated by all those who attended.

MINUTES OF COUNCIL MEETING, 21 NOVEMBER 1997

The President, A. Kellehear, opened the General Meeting at 8:10 pm

Present: D. Dobrosak, I. Endersby, A. Kellehear, R. MacPherson, D. & N. Stewart,

Minutes:

Minutes of the 19 September 1997 Council Meeting [*Vic. Ent.* 27(5):86-87] were accepted with the inclusion of reference to the minutes of 18 July Council meeting [*Vic. Ent.* 27(4):67] which were accepted by I. Endersby and seconded by A. Kellehear. (P. Carwardine/I. Endersby).

Treasurer's Report: The Treasurer presented the financial statement as of 21 November 1997:

Account balances stand at: General Account \$4,392; Le Souëf Award Account \$3,264. Membership is 103 including 7 Associate members and 10 subscribers. The Treasurer advised that the Society's fixed deposit of \$1,000 had been renewed. (Endersby /P. Carwardine).

Editor's Report:

The Editor reported that the December issue of *Victorian Entomologist* was nearly completed but only one article was in hand for the February issue. Members and readers are encouraged to submit articles. Council members are always happy to assist prospective writers.

Correspondence:

- Science talent search competition results were advised: The major bursary of \$30 was awarded to Katherine Lethbridge of Roberts McCubbin Primary School, Box Hill South for "The Ladybird game". The minor bursary of \$20 was awarded to Julia Stephanie and Curtis Haddon of Sheldford A G S Junior, Caulfield for a video entitled "Household chemicals and their effects on people".
- A request from the Science talent search competition organisers to continue sponsorship of the competition.
- Field Naturalists Club of Victoria request for nominations for the Australian Natural History Medal.
- Friends of Cranbourne Gardens letter requesting submissions to the local planning authority and the local member against an arterial road through the Cranbourne Botanic Gardens.
- Department of Natural Resources and Environment, research permit for Organ Pipes National Park.

General Business:

Archives of the Society: T. New had contacted the Society about storage of the Society's archives. I. Endersby and A. Kellehear agreed to ascertain the volume of the archives and discuss possible storage locations for them.

Science Talent Competition: The Society's continued support by way of a major and minor bursary was endorsed by Council. I. Endersby also informed Council that he had offered to present a paper on entomology at the Science Teachers Association conference in February 1998.

Nominations for the Natural History Medal: Council agreed that a submission to the Field Naturalists Club of Victoria would not be made at this time.

Friends of Cranbourne Botanic Gardens: Members are encouraged to send submissions to the local planning authority and member. The closing date for submissions is 22 December 1997. Please contact the Secretary if you require further information.

Member's night program: The program for the December meeting will be as in previous years. The program will include the following: K. Dunn - Video on European Butterflies, R. MacPherson - Insects of Bali & Lombok. D. Dobrosak - Preliminary report and set specimens from the November Organ Pipes National Park survey. Council will provide tea and coffee, members are requested to bring a plate.

Program for 1998: The program for August and October was discussed. August: A joint presentation by I. Endersby and A. Farnworth on Insect Photography. October: Visit to the Museum of Victoria, Abbotsford annex (subject to access as a result of preparatory works for relocation to new premises).

Excursions: P. Carwardine proposed an excursion/survey of Mud Island. The last entomological survey was by Alex Burns in 1946. The Friends of Mud Island travel to Mud Island on the 4th Sunday of each month for a fare of \$10 return. P. Carwardine will contact the Friends group to obtain more details.

The meeting was closed by the President at 9.23 pm

The Romance of Insects in European Art
Allan Kellehear, Ph.D.

How are we to understand the term 'romance' in connection with insects? Romance, like its sibling idea Love, is one of the most difficult and elusive terms to define in any world let alone the one in which art inhabits. The art critic Vaughan asserts that it is not an idea that can be 'catalogued...by means of an inventory of features' (1978: 11) but I don't agree. If we cannot come to some approximate understanding of a thing by listing its probable features then we all remain doomed to be lost forever in a world characterised by difference. If accuracy is never to be ours, perhaps we might seek resemblance for consolation. In that spirit then, let us begin.

Lister (1989), a perhaps more optimistic commentator on Romantic art than Vaughan, argues that the term 'romance' implies imagination, high sentiment, the exotic, and the beautiful. But mostly Romantic Art, an artistic production from around the mid 18th to the mid 19th century, was characterised by an attention to the particular, the individual. Paintings characterised as 'romantic' invited the viewer to be involved with an inner experience, to respond emotionally to art.

But tonight's talk is not about Romantic art, that is, art from a certain period, but rather the romantic spirit in art. This is best seen in the Romantic Period but it is not exclusive to it for as even Lister argues in virtually the last line of his own work on the subject, romanticism will exist as long as people do. It is an 'elemental part of the psyche'. The poet Novalis wrote in 1799 that:

'in so far as I give to the commonplace a lofty meaning,

to the ordinary an occult aspect,

to the well-known the dignity of the unknown...

I am romanticising them'

(from Vaughan 1978: 263).

In this Novalisian way we may speak about the 'romance' of insects in European art. In the familiarity and ordinariness of insects the romantic brush and pen invites us to look again. For a moment or two the insect images are no longer familiar, but strangely unfamiliar, spell binding in exotic beauty. Paint and line evoke in us more than the intellectual because we now see more than biology, or indeed, entomology.

The image of the insect is made supernatural here, surprisingly sensual there, strangely and hypnotically like ourselves everywhere. Recognisable pathos) humour, and longing are present but our gaze drops into the images like a stone in a dark and bottomless well. The feeling of motion is stirred, is felt, but the journey is unknown even as the destination is whispered and suggested in our ear. We are now caught up in the romance of insects in European art.

The artistic use of insects in European art has been a regular although uncommon feature of European art. The appearance of insects in art goes back at least as far as the Egyptians who fashioned bees, butterflies and scarab beetles in their metal work and wore these as royal jewellery. In the world of painting and illustration, the main concern of tonight's presentation,

insects have been used mainly as props or decorations to the main scenes. However, this has not been their only purpose.

Insects have also been used to help convey the whole gamut of human emotion and aspiration: friendliness, innocence, menace and threat, mystery, femininity, sensuality. Its expressions have been controlled and formal, male, female and androgenous, philosophical and polemical. Insects have been employed in European painting to evoke the sensual, the divine, the moral, but also to express wit and provoke humour and laughter.

Some styles of painting convey their message in literalist or naturalistic ways, choosing to paint or draw their creatures with a precise and technical rendering of the real thing in nature. I have called these paintings examples of 'romantic naturalism'. Insects in these art works look like real insects. They are almost entomological portrayals. I present three examples of English Naive paintings, and also studies from Redon and Gosse as examples of this style.

Note the controlled and formalist style. The paintings are studied and naturalistic. Each painter tries to convey detail as best as he is able. The study by Gosse is so detailed as to be entomological in first appearance but the solitariness of its subject elevates even this to a contemplation upon its form and life. The subject, studied in detail, transcends this detail against the whiteness of its background.

Note also in the English studies but also in the work of the 17th century Italian artist Giovanna Garzoni the way the insects are portrayed as aesthetic rather than biological specimens. The insects are decorative. Their positioning is artificial, blended as they are, against architectural features or humanly arranged food. The accent is on domesticity, order and civilisation - the tamed rather than the life of the forest or the wild.

This tendency to formalise reaches its most abstract expression in the work of Escher who takes the insect form as domestic style and uses it to suggest stain glass patterns or wallpaper images for building and housing design. The formal and controlled study of the insects form is fully removed from its context here, Escher using mere form but no character of insects to convey his suggestions of the civilised and domestic life.

Other artists take liberties, attempting a bold type of caricature that might convey or evoke some symbolic reaction or interpretation from the viewer of the painting. The naive painter Charles Callin but also Pro Hart, Bill Beavan, and Clifton Pugh do this well in their art work. In Calling's 'Honey Blossom Time' we can see a romantic imagination return to idyllic natural scenes. The butterflies are props to an Eden-like (and hence human like) image of nature.

Pro Hart, sometimes described as a 'primitive style' artist (Lumbers 1977) paints his insects like he paints everything else - boldly, informally, brightly, but caricatured too. Like all natural life in the outback of Australia the insect is ever-present. Sometimes it conveys that surprising and unexpected beauty of that place as it does in 'Everlastings' or 'Grasshoppers'.

At other times, it is humans who act like insects to convey some religious theme as in 'Mining Town on Saturday Night'. Notice how the souls that gravitate to the heavens in almost exactly the same way as Hieronymus Bosch's Last Judgement scene do so in Hart's painting like insects attracted to a bright light in the dead of night? Other images of insects convey boredom, merciless heat, or death as in 'Talbragar', 'Bush Insects', 'Miners with Yabbies', 'The Feast' or 'dragonfly'.

Bill Beaven's 'Thoughts may fly' shows us how insects, like other animal images, can contribute to nationalist sentiments and images. Beaven's collage evokes the rural image of Australian society once more. Clifton Pugh achieves this more simply with 'lizard and Butterflies' by conveying the intertwining resemblance of his two subjects with each other but also to rocks, dryness of landscape and the struggle that each has with one another - like life in the dry and unforgiving outback of rural Australia or indeed, life itself.

That style of painting might be seen as the departure point for work which is deliberately symbolic. I call this next style of painting 'romantic surrealism'. In these symbolic presentations, insects are painted and/or titled to convey human experiences. They may even begin to take on human features - human body parts or facial expressions. When this technique is taken to extreme we can see open surrealism employing the insect as anthropomorphic props - images which stand in for human experiences, feelings or values.

Note Dore's portrayal from Dante's *The Divine Comedy*, Redon's 'The Smiling Spider' or Blake's 'The Ghost of a Flea'. None of these images pretends to be entomological. In any sense of the word. Dore shows a human being that has turned half spider as one of Purgatory's punishment. The spider in Redon's painting is sporting a human smile. And Blake's 'flea' is some kind of occult, anthropomorphic monster with the legs, arms and body of a man.

More sensual, and certainly less horrifying, are the feminine portrayals of Ludovic Alleaume and John Grimshaw. Alleaume shows us a woman-like creature of great softness in delicate pose over water, a woman with butterfly wings hovering, head bowed. And John Grimshaw's most romantic portrayal of similar creatures also near sources of water and hence conveying life, renewal, origins and change.

'The Spirit of Night' is excellent, literal evidence of the movement towards open symbolism. Here the resemblance toward insects is incidental. The sexuality conveyed by its naked form is dampened through use of insect wings to convey a fairy or angelic (and therefore asexual) quality to the image. We are urged to behold not one but two natural entities - a woman and an insect - in their metaphorical portrayal of neither. Here before us in this picture they are supernatural and transcendent. We see a being standing in for or symbolising an experience - night.

The surreptitious and subtle symbolism of romantic surrealism becomes open surrealism when we inspect the works of Salvador Dali or Remedios Varo. Dali's 'The Great Masturbator' and 'The Ants' bring a menacing and threatening quality back into the image of insects, or rather I should say, the threatening stereotype of insects is exploited most often by the Surrealists like Dali and Varo. The 'creepiness' of insects, like ants or grasshoppers, are meant to make us shift uneasily, uncomfortably, in our seats - literally - when we contemplate life and particularly sexuality.

Varo uses the idea of the sting and the ambiguity in identity through her marriage of the images of the bee and the human form when conveying the double sided nature of ourselves in 'Double Agent'. The annoying/ uncontrollable or unpredictable pesky flying insect is used as the menacing imagery for the understandably titled 'Insomnia'. We are fitfully bothered and disturbed by these insects.

The use of insects to stand in for human characteristics becomes full blown anthropomorphism in other art work that marries the human form with that of the insect. Insects are quasi-human in their behaviour or physical features. In children's illustration in particular, it is humans who become 'entomorphic' - they exhibit insect-like features and abilities. The use of insects to

convey these ideas in a playful way represents a genre of childrens art and illustration work. Witness the famous work of Ballantyne, Terrant, Outhwaite or May Gibb. Lets look at some of these examples.

John Ballantyne's 'The Butterflies Ball' shows a collection of moths, bees, butterflies, and grasshoppers dressed in 19th century garb and preparing to go out to the evening's 'ball'. William Mulready's illustrations show us how friendly our insect neighbours are by providing our children with rides - on the back of dragonflies or beetles. Margaret Terrant, in a much reproduced image of a child before a large flying dragonfly, reminds us of the wonder and innocence of childhood through our early relationship with things that fly.

The bright colours of one of the illustrations in the book 'The Death and Burial of Cock Robin' painted by an anonymous 18th century artist remind us of the brilliant fluorescence of early childhood light but also the fantasy of animals helping one another in the ritual over death and burial. Ida Rentoul Outhwaite is constantly showing us through her fairies and elves the close kinship which children seem to enjoy toward and for those creatures.

Note how many of the fairies have the wings of butterflies or moths and how the little elves have dragonfly wings emanating from their shoulders. The intimate relationships but also the parallels that children enjoy with insects is conveyed by one of May Gibbs illustrations showing a gumnut baby emerging from its own cocoon like the larvae next to it.

Richard Doyle supplies us with a famous and startling series of fantastic images of insects, fairies and children in an explosion of mixed forms and playful scenes: fairies ride on the back of winged insects or beetles, elves tease a butterfly at least as big as themselves; the chariot ride is drawn through the sky by a dozen butterflies acting as 'horses'; battle scenes, sleepy scenes, and scenes of elves competing with butterflies for flower nectar. Charm and whimsy, the stuff of childhood fantasy and dreams, Doyle captures the human in insects and the insect life in human fantasy.

But it is not all childhood and children. Illustrators have also shared their love of insects and the humour and anthropomorphism with adults. Witness the numerous cartoons of Gary Larson - the famous 'Far Side' illustrator.

Larson shows that insects have humour, in the frame of ants piling into a 'phone booth like 1930s college pranksters; in the frame sending up the famous film 'The Fly' in which 'The Fly's' wife is depicted as impatient for him to come out of the lab and have tea. In another frame, Larson shows us that even spiders can have a bad day when their webs go wrong, or show us how cunning [or lazy] some spiders can be when one of them builds a web right in front of a cocoon. And finally the all too familiar night at the horror movies is recalled by all of us when a bunch of insects go to see a B grade sci-fi called 'The Return of the Killer Windshield'.

But lest you think that Larson's use of insects is a recent entry into the insect humour stakes, Punch Magazine's cartoon (1879) 'Sweet Little Buttercup' shows us otherwise. Here, a woman wearing a spectacular dress of flowers stuns the insect world. The insects have human expressions but insect values - is that human being really wearing all those plants?!

So, as you can see insects are an important part of the art world and an important part of its romance. The creatures of the insect world are formally and technically portrayed in their appearance in romantic naturalism and as decorative variations of this in many examples of English and Italian naive painting. Other areas of the art world use insects to convey symbolic

messages that do not involve major manipulations or changes in their form. We have seen how this is done in 'Primitive' painters such as Pro Hart.

Without changing form at all, other insect portrayals show them acting in human ways, domesticated, playing or servants of the will of children or fairies and elves. The illustrated art of children best exemplifies this romantic tradition in art. In Larson's cartoon work insects are just humans in the shape of insects. But in other traditions of art the insect form blends with the human form, or indeed, perhaps the human form adopts a decidedly insect shape or character. We see this best in the deliberately symbolic work of the romantic surrealists such as Blake's 'Flea', Redon's 'spider' or Grimshaw's 'night spirit'. But we also observe this in the open surrealism of Salvador Dali and his peers such as the hermetic surrealist Varo. So insects appear as themselves, or as ourselves with a hint of their morphological or symbolic heritage.

Insects are shown as a pictorial meditation on the wonder of life right through to their portrayal as men, women or children like ourselves. Their mutation sees them as friends of children and the relatives of angels. Their forms are pixie-like at times, demonic and dark at other times. They evoke shock, and also gentle and pleasing surprise. They pric open our curiosity for them and help us reflect upon ourselves. The artist calls on the insect, captures its colours, manipulates and alters their form, sometimes transforms their function but always our way of seeing them.

Art, to use Novalis's term, 'romances' the insect. A lofty meaning is suggested, an occult aspect is revealed - sometimes openly, sometimes in the spaces of doubt we feel during our gaze. The taken-for-granted form of the insect is always transformed, in subtle or dramatic ways, and then the picture of the well-known does indeed take on what Novalis has called 'the dignity of the unknown'. This is the romance of insects in European art.

And we too, in entomology, romance the insect. I am regularly asked why I am interested in insects. This is nearly always asked in semi-hysterical tones or in barely disguised derision. How could anyone be interested in INSECTS. Don't we have sprays for that kind of thing these days?

Urban life and modernity have distracted our gaze away from our natural context and privileged the sanitised lines and spaces of modern life. Within those living areas we have become self absorbed with our own story and our own social forms, watched or heard in the closed encounters of television, cinema, radio or compact disc players. Culture has become our principle pre-occupation and obsession.

When we leave the building we do so to travel to another or to enjoy other culture - the physical culture of sport. And in those outdoor encounters as indeed with the indoor ones, insects are the stuff of pests. They are the targets of Acroguard or Baygon products. Louis the Fly has become the modern symbol of the insect - pestilence. But in quieter moments, most people can remember the romance of insects - that same romance that inspired the art work we have seen here tonight.

Remember how the sound of cicadas or crickets on a warm summer's night can seem to call your name; how the Christmas beetles settling on the wattle bushes around Christmas time looked like nature's contribution to the orange and green tinsel of the period itself. Don't these images recall things precious to you?

Or sometimes a Common Brown or a Blue Triangle butterfly will cross your path while gardening one day, or perhaps you will accidentally stumble upon a cluster of ladybeetles. And just for a moment, if only a brief moment, this might remind you of younger days when you ran

after them for fun, or to collect them to put in mother's jam jars. The sight of larvae on leaves, might also bring back school time memories of silk worms and mulberry leaves in old shirt or shoe boxes.

In these and a dozen other ways, we are transformed by the ordinary image of the insect, the insect comes to symbolise something beyond itself. In all these ways we remember and experience the romance of insects.

And when I take my listener back with me to these gentler times and experiences, even the most cynical and urbane companion can, just for a moment, however brief that moment, think or imagine that they too can hear the insects call their name. They can understand that, in Art, as in their own lives and experiences mirrored there, that a love of insects can be a true and enduring romance.

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INSECT BEHAVIOUR (3)

[An occasional series reporting examples of insect ecology or ethology from the current literature]

Some species of the Noctuidae are known as armyworms because they can often behave gregariously, destroying crops and cereals as they advance on a front, devouring all available vegetation as they move. Sometimes the larvae show a polymorphism depending on their phase. Under low density conditions the larvae are much paler than the dark ones that exist in the high density army phase. Generally a high density of larvae will lead to a corresponding high density of emerging adults. Armyworms, as well as being important agricultural pests, have been studied for the insights that they can give into sperm competition, one of the topics of extreme interest to behavioural ecologists.

Competition between males occurs not only in territorial disputes and opportunities to mate but also by methods in which they can maximise their own sperm's precedence where females have accepted more than one mating. A number of mechanisms have evolved as a result of this competition.

Yibin He and Tadashi Miyata [Variations in sperm number in relation to larval crowding and spermatophore size in the armyworm, *Pseudaletia separata*. *Ecological Entomology* 22: 41-46 (1997)] note that previous studies have shown that the spermatophore size produced by males which had emerged from the high density phase were larger than those from the low density phase. Also females which received large spermatophores re-mated less frequently than those which received a small spermatophore and competition between males for females was more intense when the density of the adults was greater. The larger spermatophores in the males from crowded larvae are thought to be a mechanism to prevent females from re-mating in the competitive conditions of high adult density.

Lepidopteran sperm are contained in a packet called a spermatophore which is passed from male to female during copulation. Males produce two different types of sperm: eupyrene, which have a nucleus and fertilise the eggs, and apyrene, which lack a nucleus and cannot fertilise eggs. Apyrene sperm are cheaper for a male to produce and a number of hypotheses have been proposed to explain their purpose. The production of sperm usually begins in the later larval instars and may continue throughout the life of the male or terminate before adulthood.

The authors set out to test quantitatively whether adult males from the dense larval phase transferred more sperm than those from the low density phase thus giving themselves two advantages: increasing their sperm's precedence through a volume effect, and by delaying future matings of the female with other males. They found that the larger spermatophores held more sperm than the smaller ones, however, there was no significant difference between the number of eupyrene sperm in each. The difference occurred because of the increased number of apyrene sperm in the larger spermatophore. Another experiment showed that the number of eupyrene sperm which a female held decreased gradually with time but the apyrene sperm numbers decreased sharply after three days after copulation. Normally, almost all re-matings occur within three days.

A possible explanation for the observations is that crowded phase males react to intense sperm competition by producing more sperm. Their ejaculate contains sufficient eupyrene sperm to fertilise all of the female's eggs so production of the additional cheaper apyrene sperm is an economic expenditure strategy. Females which have a large amount of sperm in their spermatheca might be less likely to re-mate and the apyrene sperm seem to live just long enough to last beyond the critical period of three days.

Ian Endersby

BIOLOGICAL NOTES ON SOME EASTERN AUSTRALIAN BUTTERFLIES PART II

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Summary: new confirmed and probable larval hosts, alternative diets, ant attendance records and/or associated biological notes are recorded for one or more of the following species: *Suniana sunias* (C. Felder), *Delias argenthona* (Fabricius), *Heteronympha merope* (Fabricius), *Vanessa kershawi* (McCoy), *Jalmenus evagoras* (Donovan), *Ogyris abrola* (Westwood), *O. olane* (Hewitson), *Nacaduba kurava* (Moore) and *Prosotas dubiosa* (Semper). In addition, an unusual suburban Melbourne record of *Toxidia doubledayi* (C. Felder) is reported, and a new inland locality for *Cephrènes augiades* (C. Felder) in southern New South Wales is provided.

HESPERIIDAE

Toxidia doubledayi

Braby (1994) gave evidence of an apparent influx of this species into the north-eastern suburbs of Melbourne in recent years. At the corner of Dorset Road and Boronia Road - a very busy intersection in built up Boronia, I encountered a fresh female resting on a shop window pane at 6 pm (ESST) on 9 December 1996. This eastern suburban area seems a remarkable locality for this skipper and may support Braby's opinion. Although not previously recorded from Boronia, the skipper is still plentiful in remnant bushland at The Basin (a neighbouring suburb) (Dunn 1996).

In the hills near Melbourne *T. doubledayi* inhabits open forests and woodlands where it is often abundant. The species can be very common at times in Churchill National Park (particularly so in the 1995 season), however, during my years of residence in the nearby city of Dandenong (during the 1970's, parts of the 80's and early 90's) I never once saw an adult within or near the residential area. It would seem that the species is usually sedentary.

Suniana sunias

On 3 July 1993, three fourth and fifth instar larvae were obtained from a *Paspalum* sp. (Poaceae) growing on the foreshore at Burleigh Heads Qld. These larvae completed development on foliage of Alexandra palm (*Archontophoenix alexandrae*; Arecaceae); the adults emerged on 27 July, 1 and 9 August 1993. Palm foliage was proffered from the day of capture and larvae fed on the substitute diet for some two weeks before pupating. Feather palm foliage keeps very well in containers compared to many soft grasses and may provide a suitable alternative diet for other small hesperiines in captivity.

Cephrènes augiades

In July 1995, a mature male larva was found on a European Fan Palm (*Chaemerops humilis*) growing in the Botanical Gardens at Albury NSW. As there were many empty shelters of various sizes on what are long established palms, it seems reasonable to suggest that a palmdart skipper population has established at this inland locality. Other cities along the Murray River may also have resident populations, but my brief searches of suitable palms at both Mildura Vic. and Renmark SA during the autumn of 1997 did not provide evidence of colonies in this region. The Albury larva showed the pale headed form - seemingly associated with winter conditions (Dunn 1995a)

PIERIDAE

Delias argenthona

In 1993 several pupae reared from third instar larvae obtained from a *Dendrophthoe* sp. at Maryborough Qld., were refrigerated at circa 4°C for about 10 days. These pupae perished as a result of this artificial chilling. The control batch of ten pupae retained indoors at Beenleigh emerged successfully producing the usual equal sex ratio. The passing mention in Dunn (1995d) of "tropical *Delias* pupae" which died after refrigeration was based on the above circumstances; other larvae from this cohort participated in dietary trials (see Dunn 1995b).

NYMPHALIDAE

Heteronympha merope

In suitable weather the observation deck of Rialto Towers in Melbourne's CBD offers stunning views of the city, but it was with some amazement that on 3 January 1995 at 3pm (ESST) (outdoor temp of 30°C) I was greeted by a single 'hilltopping' or, more precisely, towertopping male of *H. merope*. The male, seemingly in good condition, was patrolling back and forth along one side of the building and, occasionally, attempted to land on or near the base of the vertical windows of the observation deck, about 236m precipitously above the roads below. Hot and gusty conditions outside seemed to restrict the male's ability to settle, causing it to be swept out some five to eight metres by strong updrafts, from whence it returned again to fly adjacent the windows (variably one to two metres away from the glass). The male appeared to attempt to maintain the same altitude, varying only from about a half a floor below to half a floor above the observation deck with most time spent at deck level - roughly level with my eyes. The territory was clearly associated with what is the first of three conspicuous tiers below the building roof or summit area (253m).

H. merope is a known hilltopping species and one of the few Victorian satyrids which can breed (albeit in lower numbers) in urban parkland and heavily built up areas. 'Towertopping' is a remarkable behavioural adaptation in mate location and begs the question of whether females will ascend sky scrapers in search of mates! From a conservation perspective, if low shrubbery and flowering plants (eg. *Helichrysum*, *Scabiosa* etc) are grown (safely) on highrise roof tops or outdoor galleries, additional perch sites and nectar sources could be made available for our hilltopping city butterflies in what is presently rather arid and inhospitable terrain.

Vanessa kershawi

In December 1996 many larvae were present on *Chrysocephalum semipapposum* (Asteraceae) grown at Knoxfield Vic. A small number of larvae were reared to maturity confirming the species involved. This nymphaline has been reared from 13 other members of this family and one member of the Lamiaceae (Dunn & Dunn 1991, Braby 1997).

LYCAENIDAE

Jalmenus evagoras

In December 1981 at Dorrigo NSW I found a population of *J. evagoras* breeding on *Acacia holosericea*. Earlier (Dunn 1982), I mentioned taking of a number of pupae at this site but no biological details were provided. The wattle involved - a new foodplant - is a native of northern Queensland and had been planted as a decorative in parkland close to natural bushlands. In eastern Australia, larvae have been recorded attended by *Iridomyrmex* spp. belonging to the *anceps* and *rufoniger* spp. groups (Pierce *et al.* 1987). The attendant ant species at Dorrigo was not recorded as no ants were preserved.

J. evagoras has now been recorded from 25 host plants (Dunn & Dunn 1991, Crosby 1994, Dunn 1995e, this paper) - all *Acacia* spp. No doubt this list will be extended, since, in her selection of oviposition sites, the female butterfly is influenced by the presence of remains of past pupae and individuals of an appropriate attendant ant species rather than by the quality or suitability of the larval host (Kitching 1987). This host selection mechanism is so controlling that Kitching reported inducing females to lay eggs on *Eucalyptus* seedlings - plants thought to be unsuitable for larval development in this species - albeit a congener, *J. daemeli*, does occasionally utilise *Eucalyptus* spp. (Myrtaceae) (Macqueen 1965).

Ogyris abrota

During 1995 several later instar larvae, obtained from *Muellerina eucalyptoides* (Loranthaceae) at Dandenong Vic., were proffered variably aged foliage of *Amyema pendulum* (Loranthaceae) but refused to feed. Although *A. pendulum* is very common in places where colonies of *O. abrota* occur near Melbourne, it seems that the species cannot utilise *Amyema*.

Ogyris olane

A third instar larva from near Endeavour Hills Vic. which was found feeding on *Amyema pendulum* was proffered both *A. quandang* and *Muellerina eucalyptoides* (all Loranthaceae). Both of these trialed plants are abundant and sympatric where the larva was found. Typical of the species near Melbourne the larva was solitary and unattended by ants. As the larva was collected during winter and had entered a winter semi-diapause it was necessary to incubate the larvae at 26-27°C for some 36 hours to re-establish feeding on the natural host before alternative diets could be trialed.

Larvae of this species favour young foliage in the field. In captivity the larva consumed only younger foliage when proffered leaves of *A. quandang*. The larva grew at the normal rate on this plant so it is possible the species could utilise it in the wild although this has never been observed. Moreover, when young foliage of both this and the natural host were proffered together the larva consumed mostly *A. quandang*! The larva was also provided both young and middle-aged leaves of *M. eucalyptoides* which it refused. Similarly, it would not accept foliage of *Exocarpos cupressiformis* (Santalaceae). At constant 28°C the pupal duration lasted about 11 days.

Nacaduba kurava

On 7 November 1995, between 1000-1100hrs EST, several females were observed flying above, and walking along, racemes of *Maesa muelleri* (Myrsinaceae). Several females observed at very close range were seen to deposit eggs singly on buds, and an inspection of several racemes revealed a number of eggs. The host plants comprised young saplings, about 1-1.5m high, growing sporadically in woodland ecotone close to upland riparian rainforest situated some 9 km west of Paluma Qld. *N. kurava* is known to utilise other myrsinaceous plants including two *Maesa* spp. viz. *M. dependens* at Paluma (Valentine & Johnson 1988) and *M. haplobotrys* near Cairns (Common & Waterhouse 1981). The above oviposition record almost certainly implicates *M. muelleri* as a new larval host of this lycaenid.

Prosotas dubiosa

At Griffith University (Nathan campus) at 1:00pm (EST) on 22 June 1993 a female of *P. dubiosa* was seen, about two metres above ground, fluttering about developing racemes of *Acacia concurrens* (Mimosaceae). Conditions at the time were typical of winter, 22°C with a clear sky, and the female corresponded to the winter form recognised by the more extensive bright central blue areas - indeed, also conspicuous in flight. During the hotter months the central blue area of the female of *P. dubiosa* is more restricted, and a parallel phenomenon occurs also in *Nacaduba berenice* and probably other allied lycaenids.

The female *P. dubiosa* exhibited pre-oviposition flight above the foliage and settled quickly (within 4-5 seconds each time). She crawled over racemes, repeatedly extending and arching her abdomen and then placed the tip amongst the numerous flower buds. This 'abdominal probing' behaviour was repeated some 10-15 times. She then flew to the next raceme and commenced the sequence again. On occasion she rested on a raceme or a leaf, always with wings closed, and moved her hindwing in a 'figure 8' pattern (typical of many other lycaenids) before flying again to recommence the presumed oviposition behaviour. The 'figure 8' wing movements were not initiated during the presumed oviposition sequence. The whole procedure was repeated over a period of at least half an hour. Microscopic examination of one raceme revealed no evidence of eggs but they can be rather hard to see amongst the many dense buds. *A. concurrens* almost certainly represents a utilised host of this butterfly near Brisbane.

On 11 January 1994, several males of *P. dubiosa* were observed flying about and perching on an exotic plant from south-west USA and Mexico, *Pithecellobium flexicaule* (Mimosaceae), growing in the Mount Coot-tha Botanical Gardens. Interpretation of this standard lycaenid territorial behaviour dictates that these males were presumably establishing perch sites associated with either an oviposition/emergence site or a foraging site. As there were no flowers anywhere nearby, the males must have recognised this as an oviposition host of their species - hence it is probably utilised as a food plant. Preliminary flower buds were formed, and these were at a similar stage of development as those on the *A. concurrens* which had attracted the female documented above.

Acknowledgements

The *Maesa* plant was identified by T. Spokes (Queensland Herbarium); the *A. holosericea* was identified by Dr S. Forbes (then of the National Herbarium Vict.); M. Muragappin and B. Henderson (Ag.Vic.) identified the *Chrysocephalum* host; and R. Coutts (GU) identified the *A. concurrens*. All mistletoes, palms, grasses and Victorian wattles mentioned were determined by the author.

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BOOK REVIEW

A Guide to the Genera of Beetles of South Australia. Part 7

Polyphaga: Chrysomeloidea; Cerambycidae

E. G. Matthews, South Australian Museum, Adelaide. 1997. 64pp. \$12.95

This book is the seventh in a series providing a guide to the identification, to genus level, of the beetles of South Australia. The Parts, which have appeared over a 17 year period, deal with the following groups:

- Part 1. 1980 Archostemata and Adephaga
- Part 2. 1982 Staphylinioidea and Hydrophiloidea
- Part 3. 1984 Eucinetoidae, Dascilloidea and Scarabaeoidea
- Part 4. 1985 Byrrhoidea, Buprestoidea, Dryopoidea, Elateroidea, Cantharoidea, Derodontoidea and Bostrichoidea
- Part 5. 1987 Tenebrionoidea
- Part 6. 1992 Lymexyloidea, Cleroidea and Cucujoidea

Part 1. contains an introduction to the use of these manuals and keys to the suborders, so that it is important to read this before attempting to use the other parts. The first section of the manuals consists of an introduction to the classification of the genera under consideration, their biology and an extensive list of references. The second part, which is the most important, is the keys which are in the form of pictorial dichotomous keys. These keys are a joy to use and a wonderful introduction to those of us who may find the usual written key somewhat daunting. The only other good key to the identification of beetles is that of J. F. Lawrence and E. B. Britton in *The Insects of Australia* 2nd. ed., C.S.I.R.O. 1991 which identifies down to Family level but covers the whole Australian fauna. To use a key of this type it is almost essential to have a glossary of terms on hand all the time and there is a constant turning of pages to find the appropriate illustration. This is all avoided with Matthew's keys as all the terms are explained and illustrated on the page. The third section has illustrations of representatives of each genus, mostly as black and white photographs of museum specimens but in some parts there are drawings as well. In the part under review there is a list of host plants. The parts are rounded off with a comprehensive index.

The main disadvantage of these manuals is the limited geographic scope, being restricted to the State of South Australia - not southern Australia where they might be more useful to Victorians and others. Entomologists from other states should approach the keys with caution. A genus not included in Matthew's keys may well key out erroneously only adding to confusion. The author warns of this limitation in his introduction - "I cannot recommend its application much beyond the borders of South Australia. Eastern and Western Australia both having a very much richer fauna, with many genera not represented here". Another cause of frustration is the length of time that it has taken for each part to appear; about two years between parts. With the expectation of at least two further parts (covering the Chrysomelidae and Curculionidae) it will be at least 2001 before the work is complete. There is much to be said for producing such a work in one go but, of course, this would deny the community a valuable working tool for much longer. A further disadvantage of this time factor is that taxonomy progresses in the meantime and each new part has additions and corrections to previous parts.

In summary, however, despite these limitations, I strongly suggest that anyone with any interest in Australian beetles should have these books in their library. The authority of Dr. Matthews, the excellent clarity of the keys and the all round fine production makes these books a valuable addition to the literature of entomology.

All Parts are available from South Australian Museum Shop, North Terrace, Adelaide, South Australia, 5000.

Peter Kelly

REPORT ON KINGLAKE NATIONAL PARK INSECT SURVEY

Daniel Dobrosak, 66 Wiltonvale Avenue, Hoppers Crossing 3029

The Survey was held on a warm, sunny day on 8th December 1996 and attended by fourteen members and friends under the supervision of P. Carwardine, D. Dobrosak and I. Endersby (Research Permit 956/135). Five areas were investigated (1) Masons Falls Office area (briefly), (2) Captains Creek Road, (3) Island Creek Picnic Area, (4) Andrews Hill and (5) Beggary Hill Track.

National Park Visitors Centre area

<i>Tisiphone abeana</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Swordgrass Brown). Feeding at yellow flowers of <i>Goodenia ovata</i> (Goodeniaceae)
<i>Pieris rapae</i>	(LEPIDOPTERA:PIERIDAE)	(Cabbage White). Female
<i>Vanessa itea</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Admiral)
<i>Vanessa kershawi</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Painted Lady)

Captains Creek Road

<i>Argialestes eboraacus</i>	(ODONATA:ZYGOPTEA)	(Damselfly). female
<i>Austrolestes analis</i>	(ODONATA: ZYGOPTEA)	(Damselfly). female
<i>Chaerocoris paganus</i> *	(HEMIPTERA:SCUTELLERIDAE?)	(Jewel Bug)
<i>Heteroptera sp.</i> *	(HEMIPTERA:HETEROPTERA)	(bug)
<i>Metriarrhynchus rhipidius</i> *	(COLEPTERA:LYCIDAE)	(Beetle)
<i>Carabidae sp.</i> *	(COLEPTERA:CARABIDAE)	(Ground Beetle). Small black
<i>Carabidae sp.</i>	(COLEPTERA:CARABIDAE)	(Ground Beetle). Large black
<i>Argynnis cyrilla</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Cyril's Brown)
<i>Belenois java</i>	(LEPIDOPTERA:PIERIDAE)	Caper White. male
<i>Heteranympha merape</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Common Brown). Both sexes
<i>Candalides hyacinthinus hyacinthinus</i>	(LEPIDOPTERA:LYCAENIDAE)	(Common Dusky Blue). Males feeding at <i>Bauera</i> sp (Myrtaceae) and also at <i>Leptospermum</i> sp (Myrtaceae).
<i>Trapezites phigalioides</i>	(LEPIDOPTERA:HESPERIIDAE)	(Phigalioides Skipper). Males perched at ridge top
<i>Vanessa itea</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Admiral)
<i>Vanessa kershawi</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Painted Lady)
<i>Badumna longinquus</i>	(ARACHNIDA:DESIDAE)	(Small Black House Spider). 1 female, web and retreat on Stringybark tree
Family Oxyopidae	(ARACHNIDA:OXYOPIDAE)	(Lynx Spider). 1 female on <i>Goodenia ovata</i> foliage.
<i>Sandalodes sp.</i>	(ARACHNIDA:OXYOPIDAE).	(Jumping Spider). Several, on road.
<i>Stiphodon sp.</i>	(ARACHNIDA:DESIDAE)	(Crinoline Spider). 1 female, under log.
Family Nemesiidae?	(ARACHNIDA:NEMESIIDAE?).	(Spider). Possibly <i>Stanwellia</i> sp. 2 immature females, body lengths 10mm and 15mm under logs

Captains Creek Road (continued)

	Order Tricladida	(Flat worm - Planarian). 1 cream/white, 3 stripes along body - outer stripes pale brown, central stripe darker, head tan, length 4cm, under log.
	Class Chilopoda	(Centipede). 1 Centipede. orange/brown with eggs, length 1.5cm, under log.

Island Creek Picnic Area

<i>Argynnis cyrilla</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Cyril's Brown)
<i>Zizina labradus</i>	(LEPIDOPTERA:LYCAENIDAE)	(Common Grass Blue)
<i>Vanessa itea</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Admiral)
<i>Curculionid</i> sp. *	(COLEOPTERA:CURCULIONIDAE)	(Weevil)
Brown sawfly	(HYMENTOPTERA:SYMPTATA)	(Sawfly larvae, brown)
<i>Iridomyrmex foetans</i>	(HYMENTOPTERA:FORMICIDAE)	(Ant)

Andrew Hill

<i>Argynnis cyrilla</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Cyril's Brown)
<i>Vanessa itea</i>	(LEPIDOPTERA:NYMPHALIDAE)	(Australian Admiral)

Beggary Track and Area near Heidelberg Kinglake Road

<i>Tropezites phigalioides</i>	(LEPIDOPTERA:HESPERIIDAE)	(Phigalioides Skipper)
<i>Belenois jayo teutonico</i>	(LEPIDOPTERA:PIERIDAE)	(Caper White)
<i>Edusa</i> sp. near <i>chrysura</i> *	(COLEOPTERA:CHRYSOMELIDAE)	(Leaf Beetle)
<i>Rhombosternus?</i> sp. *	(COLEOPTERA:CHRYSOMELIDAE)	(Leaf Beetle)
<i>Chrysophtharta agricola</i> *	(COLEOPTERA:CHRYSOMELIDAE)	(Leaf Beetle)
<i>Chrysophtharta variicollis</i> *	(COLEOPTERA:CHRYSOMELIDAE)	(Leaf Beetle)

Insects marked with an asterisk were collected and will be lodged with the Museum of Victoria.

Acknowledgments

Thanks are extended to Ian Endersby, Kelynn Dunn and Ed Grey who provided their records, Dr Ken Walker and Ms Catriona McPhee from Museum of Victoria who provided access to the Museum's collection for the purposes of identification and DNRE staff and the Rangers at Kinglake National Park for their assistance in planning and conducting the survey. Ian Endersby provided assistance in the preparation of this report.

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Viridans Biological Databases, 1996 Version 1. Victorian Butterfly Database CD-ROM.

RECENT ARTICLES OF INTEREST

Compiled by Ian Faithfull

'Tiger' moth to bomb ragwort. *Frankston Independent* 26 August p.5. Karen Green of the Keith Turnbull Research Institute is breeding and releasing the ragwort crown boring moth, *Cochylis atricapitana*, as a biocontrol agent for *Senecio jacobaea*.

Summer wasp alert. *Frankston Standard* 8 September p.9; Sarah Dent, Wasps buzz into city, *Sun Herald* 22 October; Wasp taskforce. *Weekly Times* 22 October p.3. European wasps could be present in plague proportions this summer because of the mild winter, according to Patrick Honan of KTRI. Wasp stings are the cause of the second highest number of calls made by the public to the Victorian Poisons Information Centre. The number of hospital admissions due to wasp, hornet and bee stings rose from 80 in 1989-90 to 150 in 1995-96. Dr Ken Winkel, Deputy Director of the Australian Venom Research Unit at the University of Melbourne, suggests that an anti-venom may have to be developed. "There needs to be a lot more work into wasps." The Victorian government has set up a Taskforce to study the effects of *Vespula* spp. on the community and primary industries. Written submissions must be made by 2 December.

Jackson, M., 1997. As the worm turns. *Weekly Times* 13 August p.17. Nematodes used to control fungus gnats (Mycetophilidae) at a hydroponic gerbera farm. Dr Robin Bedding (CSIRO) discusses use of nematodes against various weevils, termites, scarab larvae, *Sirex* wood wasp and other insect pests.

Kelly, M., State rejects fruit fly fines. *Weekly Times* 1 October p.18. Unlike NSW, Victoria will not introduce on-the-spot fines for people who ignore fruit fly exclusion zones. Instead Victoria will continue to operate random roadblocks. A fruit fly outbreak in Shepparton in 1996 is estimated to have cost up to \$7 million.

Aitchison, Garry, Flutter by for a look. *Weekly Times* 22 October p.53. Gary and Chris Sobey exhibit living butterflies at Skydancers Orchid and Butterfly Gardens at Harcourt near Castlemaine.

Kelly, Mcredity. Genes lead battle against fruit pest. *Weekly Times* 12 Nov. p.25. A team at the Institute for Horticultural Development at Knoxfield has inserted a proteinase inhibitor gene from ornamental tobacco plants into cells of Pink Lady and Royal Gala apples. The genes are expected to make the plants resistant to codling moth and light brown apple moth because they code for a protein which prevents the insect from digesting vegetation.

Adair, R.J. and Scott, J.K., 1997. Distribution, life history and host specificity of *Chrysolina picturata* and *Chrysolina* sp. B (Coleoptera: Chrysomelidae), two biological control agents for *Chrysanthemoides monilifera* (Compositae). *Bulletin of Entomological Research* 87: 331-341. Boneseed and bitou bush, two subspecies of *C. monilifera*, are serious environmental weeds in Australia. Tests on 69 plants in 25 families demonstrated that two leaf beetles, the blotched boneseed leaf beetle and the painted boneseed leaf beetle, are *Chrysanthemoides* specific, with boneseed being the preferred host. Approval for release of these agents in Australia has been granted and both have now been released. Multiple releases totalling between 2000 and 80,000 insects, mostly larvae, have not resulted in establishment.

Adamson, D., Thomas, G. and Davis, E., 1997. An Economic Estimate of *Helicoverpa*'s Effect on Agricultural Production - Report 1 in the *Helicoverpa* Series. Cooperative Research Centre for Tropical Pest Management, Brisbane.
Budworms or *Heliothis* are among Australia's worst agricultural insect pests.

Douglas, Fabian. 1996. The Current Conservation Status of *Synemou nais* (Orange Sun Moth) and *Synemou* sp. aff. *sylene* (Pale Sun Moth), Family Castniidae and *Ogyris idmo halmaturia* (Large Brown Azure Butterfly), *Ogyris* sp.aff. *idma* ("Mildura Ogyris" Butterfly), Family Lycaenidae (including survey results of the 1995 to 1996 Field Season). Research Permit, National Parks Service Victoria 945/149. [Not seen].

Kefford, B.J., 1997. The Effect of Saline Water Disposal on the Aquatic Environment using Macroinvertebrates as Indicators: Final Report. Dept. of Natural Resources and Environment, Marine and Freshwater Research Institute, Freshwater Ecology Division, Heidelberg, Vic. [Not seen].

Miles, Melina, 1997. Identification of False Wireworms and Other Soil Dwelling Pests of Canola. 2 pp, A4 glossy pamphlet, Victorian Institute of Dryland Agriculture, Horsham. Brief text with colour photos by Paul Horne and others of adults and larvae of *Isopteron punctatissimus*, and minor or occasional pests *Pterohelaeus* sp., *Gonocephalum* sp., *Adelium brevieorne*, *Agrypnus* sp., and a beneficial Carabidae sp.

Miles, Melina and McDonald, Gary, 1997. Guide to the Key Insect Pests of Canola. 4 pp. A4 glossy pamphlet, Agriculture Victoria. Colour photos, brief description of pest and damage. Table of control thresholds (e.g. 2 large larvae per 0.5 m of row), sampling recommendations (e.g. examine soil in a 30x30 cm quadrat to a depth of 20 mm) and additional notes. *Halotydeus destructor*, *Penthaeus major* (both mites), *Brevioryne brassicae*, *Lipaphis erysimi*, *Myzus persicae*, *Agrotis infusa*, *Sminthurus viridis*, *Isopteron punctatissimus*, *Pterohelaeus* sp., *Adelium brevieorne*, *Plutella xylostella*, *Nysius vinitor*, *Helicoverpa punctigera*, *Deroeras reticulatum* (slug).

Miles, Melina, 1997. Guide to the Key Insect Pests of Pasture. 2 pp, A4 glossy pamphlet, Victorian Institute of Dryland Agriculture, Horsham. Brief text with colour photos. Table of control thresholds, sampling recommendations and additional notes. *H. destructor*, *P. major*, *S. viridis*, *Persectania ewingii*, *P. dyserita*, *Leucania convecta*, *Aphadias tasmaniae*, *Adoryphorus eouloni*, *Ciampa arietaria*, *Hednota* sp., *Teleogryllus commadus*, *Sitona discoides*.

Thanks to Robin Adair and Nicole Freeman for contributing material.

Readers are invited to forward material for inclusion in "Recent Articles of Interest" to the compiler at 16 Nabilla Avenue, Seaford, Vic., 3198.

EXCURSION/FIELD SURVEY TO ORGAN PIPES NATIONAL PARK, KEILOR

Survey No. 2 10 am Saturday 13th December 1997

Organ Pipes National Park is approximately 20 km north-east of Melbourne, on the north side of the Calder Highway just before Calder Park Thunderdome. Meet at 10AM at the Department of Natural Resources and Environment (DNRE) Visitor's Centre/Office, Organ Pipes National Park off the Calder Highway on the North side of the Calder Highway just before Calder Park Thunderdome (DNRE telephone number is 03 9390 1082). The Melway reference is Map 3 D4.

Bring lunch and drinks with you. New and old members are encouraged to take part in this survey. Last months survey of the area revealed a relatively rich fauna of odonata and coleoptera with the chrysomelidae and curculionidae being well represented. Survey work will continue on the 13th of December on the collection and identification of, Lepidoptera, Coleoptera and Aquatic insects in accordance with the Society's research permit (NP 978/102).

*Christmas Greetings to all
Members & Readers and a
Prosperous New Year!*

OFFICE BEARERS

PRESIDENT:	<i>Dr Allan Kellchear, 37 Villamanta Street, Geelong West 3218</i>
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COUNCILLORS:	<i>Ray MacPherson, David Stewart, Nola Stewart</i>

CONTRIBUTIONS TO THE VICTORIAN ENTOMOLOGIST

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

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Contributions may be typed on A4 paper or *preferably* sent to the Hon. editor on an IBM formatted disk in *Microsoft Word for Windows*, *WordPerfect* or any recognised word processor software with an enclosed hard copy. Contributions may also be E-mailed to Internet address: dobrosak@sccv.telenemo.au or dobrosak@werple.net.au When E-mailing, indicate italicised or underlined text by including a suitable ASCII character (e.g. *) before and after the relevant text. Formatted documents e.g. Word for Windows may be E-mailed as "uuencoded" text.

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DIARY OF COMING EVENTS

Friday 12 December General Meeting - Members Night
Members will give short talks and slide presentations (refer page 106 for details)
Please bring a plate. Tea and Coffee will be provided

Saturday 13th December 1997
Survey of Organ Pipes National Park
(refer to Page 123 for details)

Friday 16 February General Meeting
Dr. Paul Horne will present a talk on:
"Integrated Pest Management and the role of Native Insects as predators"

Friday 20 March Council Meeting

Friday 17 April General Meeting
Simon Hinkley of the Museum of Victoria will present a talk on:
"An introduction to the Ants and their use as
Environmental Indicators in the Box Ironbark Region"

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed, and authors alone are responsible for the views expressed.